WHAT IS CLAIMED IS:

1. A signal processing device which decodes a data stream which includes a first audio data and a second audio data sampled at different respective sampling frequencies of fs1 and fs2, where fs1<fs2, comprising:

a decoder which is inputted said data stream and separates said data stream into said first audio data and said second audio data;

a filter which, among said first and second audio data outputted from said decoder, performs re-sampling upon said first audio data at the same sampling frequency fs2 as that of said second audio data, and suppresses aliasing distortion due to said re-sampling; and

a delay unit which, among said first and second audio data outputted from said decoder, delays said second audio data by a delay period equal to a processing period due to said filter.

2. A signal processing device according to claim 1, wherein said decoder separates said data stream, processing unit thereof corresponding to said processing period in said filter, into said first and second audio data having original sampling frequencies, respectively.

3. A signal processing device according to claim 1, wherein signal processing delay time in said filter corresponds to a predetermined processing unit of inputted audio data.

4. A signal processing device according to claim 1, wherein said filter comprises:

a re-sampling circuit which, among the first and second audio data which are outputted from said decoder, performs re-sampling upon said first audio data having said sampling frequency of fs1 at said sampling frequency fs2 as that of said second audio data; and

an FIR filter which suppresses aliasing distortion in said first of audio data.

5. A signal processing device according to claim 1, wherein said second stream of audio data includes at least audio data for a forward right channel and audio data for a forward left channel.

6. A signal processing device according to claim 2, wherein said second stream of audio data includes at least audio data for a forward right channel and audio data for a forward

left channel.

7. A signal processing device according to claim 3, wherein said second stream of audio data includes at least audio data for a forward right channel and audio data for a forward left channel.

8. A signal processing device according to claim 1, wherein said sampling frequency fs1 is one of 48 kHz and 44.1 kHz, and said sampling frequency fs2 is twice as high as said sampling frequency fs1.

9. A signal processing device according to claim 2, wherein said sampling frequency fs1 is one of 48 kHz and 44.1 kHz, and said sampling frequency fs2 is twice as high as said sampling frequency fs1.

10. A signal processing device according to claim 3, wherein said sampling frequency fs1 is one of 48 kHz and 44.1 kHz, and said sampling frequency fs2 is twice as high as said sampling frequency fs1.

11. A signal processing device according to claim 1, wherein:

said second stream of audio data includes at least audio data for a forward right channel and audio data for a forward left channel;

said sampling frequency fs1 is one of 48 kHz and 44.1 kHz; and

said sampling frequency fs2 is twice as high as said sampling frequency fs1.

12. A signal processing method which decodes a data stream which includes a first audio data and a second audio data sampled at different respective sampling frequencies of fs1 and fs2, where fs1<fs2, comprising:

a decoding step of inputting said data stream and separating said data stream into said first audio data and said second audio data;

a filtering step of, among said first and second audio data outputted from said decoding step, performing re-sampling upon said first audio data at the same sampling frequency fs2 as that of said second audio data, and suppressing aliasing distortion due to said re-sampling; and

a delay processing step of, among said first and second

audio data outputted from said decoder, delaying said second audio data by a delay period equal to a processing period due to said filtering step.

13. A signal processing method according to claim 12, wherein said decoding step separates said data stream, processing unit thereof corresponding to said processing period in said filter step, into said first and second audio data having original sampling frequencies, respectively.

14. A signal processing method according to claim 12, wherein said processing period in said filtering step corresponds to a predetermined processing unit of inputted audio data.

15. A signal processing method according to claim 12, wherein said filtering step comprises:

a re-sampling step of, among the first and second audio data outputted from said decoding step, performing re-sampling upon the first audio data having said sampling frequency of fs1 at the said sampling frequency fs2 as that of the second audio data; and

a filtering step of suppressing aliasing distortion in

said first audio data.

16. A signal processing method according to claim 12, wherein said second stream of audio data includes at least audio data for a forward right channel and audio data for a forward left channel.

17. A signal processing method according to claim 12, wherein said sampling frequency fs1 is one of 48 kHz and 44.1 kHz, and said sampling frequency fs2 is twice said sampling frequency fs1.

18. A signal processing method according to claim 12, wherein:

said second audio data includes at least audio data for a forward right channel and audio data for a forward left channel;

said sampling frequency fs1 is one of 48 kHz and 44.1 kHz; and

said sampling frequency fs2 is twice as high as said sampling frequency fs1.

19. An optical disk reproducing device which reproduces multi-channel audio signals using a signal processing device

according to claim 8, when reproducing an optical disk upon which said first and second audio data, which have been sampled at respective different sampling frequencies fs1 and fs2 with fs1<fs2, have been recorded as a single stream of audio data.